Dosetaxel Induced Pericardial Effusion in Two Gastric Cancer Patients

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Dear Editor,

Gastric cancer is mostly diagnosed at advanced stages and in that case palliative treatment is the choice. In advanced stages better outcomes has been shown with chemotheurapeutics such as docetaxel, 5-FU, cisplatin, epirubicin and in Japan S1. Mostly combination regimens are studied; docetaxel, cisplatin and 5-FU combination has shown better outcomes and higher response rates.[1]

Pericardial effusion is a rare complication in cancer patients. Malignant infiltration of heart and pericardium can be seen in lymphoma, melanoma, lung and breast cancers. The mechanism of pericardial effusion can be either increase in intrapericardial pressure through the obstruction of lymphatics and venous drainage of the heart or direct invasion of pericardium. Dyspnea, fatigue, cough and chest pain are the main symptoms. Neck vein distension and pericardial frotman can be detected on physical examination and increase in cardiothoracic ratio on plain film. The exact diagnosis is via echocardiography.[2]

To our knowledge, in the literature there are only a few cases of pericardial effusion occurring during the course or after the treatment of gastric cancer. Instead in most of the cases the effusion is accompanied by malignant infiltration.

In this paper, two cases are reported in whom pericardial effusion occurred after treatment to stress on probability treatment complication.

Case 1: 32 years old female admitted to hospital with total body pain and dyspepsia. In blood analyses, ALP level was quite high. By further examination multipl lytic lesions were detected on her bones. In upper gastrointestinal system endoscopy a probable malign ulcer is detected and the biopsy revealed adenocarcinoma. Her echocardiography and cardiac examination was quite normal.

With a diagnosis of metastatic gastric carcinoma, the treatment was planned as zoledronic acid plus DCF (docetaxel, cisplatin and 5-Fluorouracil) On the 5th day of chemo, because of dyspnea and tachycardia, Echo was planned and a newly occuring pericardial effusion was detected. Chemo was stopped and because of the risk of tamponade she was transfered to coronary intensive care unit. Colchicine was added to her treatment and in the follow up her clinic improved. After her symptoms completely resolved, she was discharged from hospital with colchicine. When she admitted for the second cycle of chemo, in repeated echocardiography pericardial effusıon was detected and second cycle couldn't be given. During follow-up cardiac tamponade developed and therapeutic pericardiosynthesis and drainage was performed. Cytologic examination of effusion was reported as benign and no microorganisms detected in the culture. Unfortunately she perished because of cardiac tamponade.

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Case 2: 61 years old male was diagnosed as gastric malignancy and total gastrectomy+lymph node dissection was performed. Pathologic examination revealed a pT3N3Mx mucinous adenocarcinoma and he was directed to our clinic for adjuvant treatment.

Adjuvant chemoradiation was decided and completed without any complication During follow-up (on 10th month after surgery) a 2,5 cm mass in left lung paranchyma and an increase in tumor markers were detected. He was accepted as metastatic gastric cancer and palliative treatment was planned. Pretreatment echocardiography was normal, but since creatinin clerance level was< 50 ml/min, docatexel, carboplatin and 5-FU combination was started. After the completion of first cycle, a rise in SGOT,and SGPT levels was detected. Further examination revealed pericardial effusion and after cardiology department evaluation colchicine was added to the treatment. After the effusion mostly resolved the chemotherapy was changed to epirubicine, 5-FU and carboplatin. With this combination he completed the cycles without any other complications.

Pericardial effusion during the course of gastric cancer is a rare entity and in the literature only a few case reports mostly from Japan have been presented. These cases have all been suggested as metastases.

Some of the chemotheurapeutics are known to have cardiac side effects. 5-FU and Capecitabine are responsible from ischemic angina or congestive heart failure. Cisplatin may cause arythmia and congestive heart failure.[3]

For docatexel peripheral edema, pleural effusion, ascites and rarely pericardial effusion have been reported in the literature. Our cases used to have normal pretreatment cardiographic evaluation and after the treatment pericardial effusion was detected. In a phase II study in which docetaxel was used in the treatment of non-small cell lung cancer, Fosella et al have reported pericardial effusion in one cases during docetaxel treatment.[4,5]

Vincenzi et al reported two cases of patients who developed repeated episodes of pericardial effusion after docetaxel infusion. In one of the cases pericardial effusion preceded to pericardial tamponade. Pericardiosynthesis was done and revealed benign cytology. Since the patient had responded well to docetaxel treatment, it was continued. But in the following cycles pericardial effusion and tamponade was repeated, pericardiotomy was to be done and the treatment was replaced by vinorelbine. In another case of malignant epithelial tumor of unknown origin, after 5 cycles of gemcitabine+docetaxel combination, pericardial effusion has been detected. The cytology was benign. Once pericardial effusion occurred, chemotherapy was changed and effusion did not occur again.[6] Just as the cases Vincenzi et al reported, in our cases pericardial effusion occurred after docetaxel treatment also. In one of our cases when docetaxel was changed in the combination, the effusion didn't reoccur. In the second case, unfortunatelly there was no time to change the chemo since the period was quite deleterious. In our cases the time of pericardial effusion was just after the first cycle, different from the other cases in literature.

It must be kept in mind that, when chemotheurapeutics having cardiac side effects are to be used, constitutional symptoms such as dyspnea and chest pain can be alerting signs of pericardial effusion and even tamponade.

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